TOMAHAWK

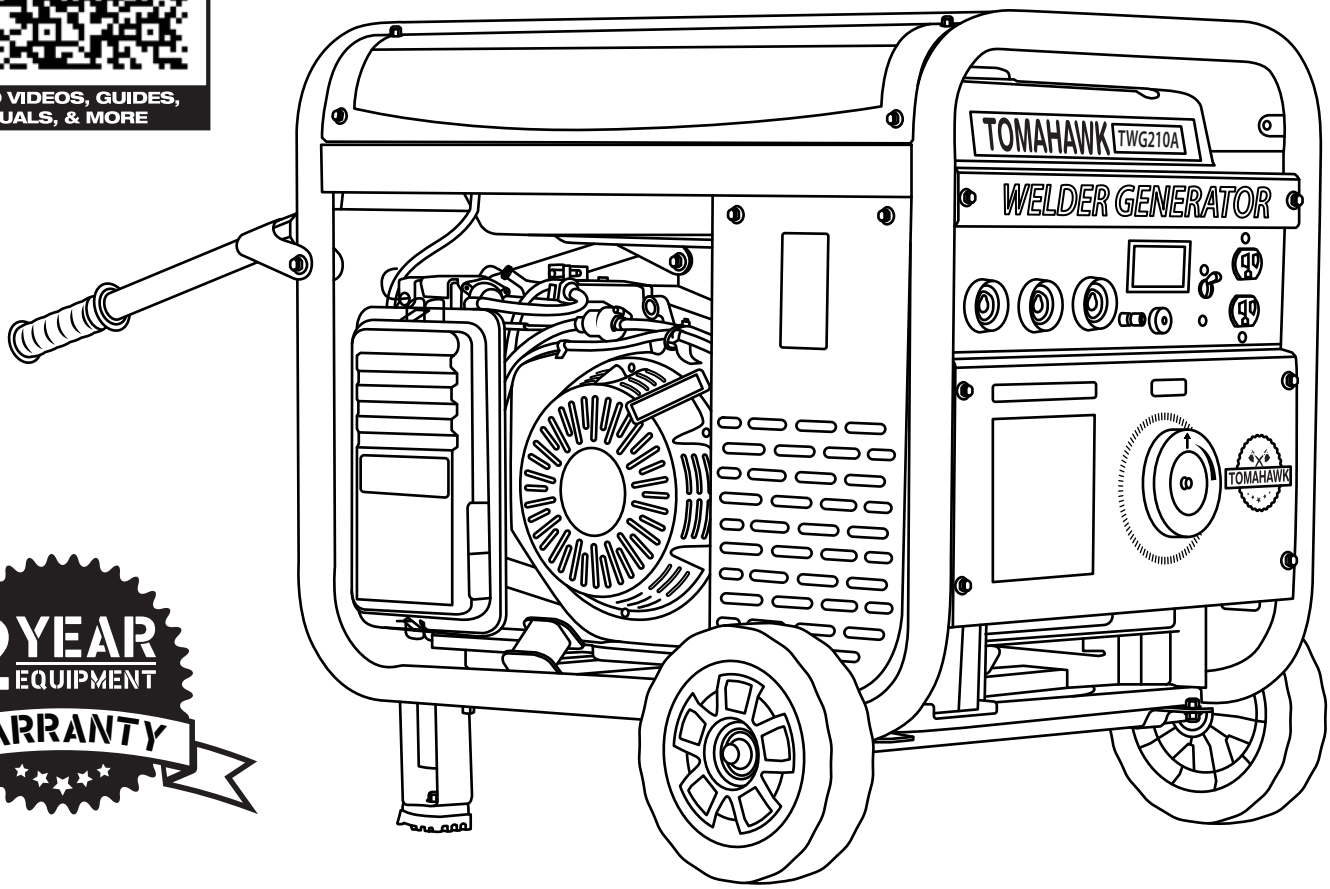
WELDER GENERATOR

MODEL NUMBER: TWG210A

Operation Manual

SCAN FOR HOW TO GUIDE

HOW TO VIDEOS, GUIDES, MANUALS, & MORE



2 YEAR EQUIPMENT WARRANTY

CALIFORNIA AIR RESOURCES BOARD

EPA

To reduce the risk of injury, the user must read and understand the Operator's Manual before using this product. Save these instructions for future reference.

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Register Your Equipment

Thank you for purchasing TOMAHAWK equipment! Your product is covered by the TOMAHAWK Warranty policy, but in order to activate your warranty, we need you to register your product. In addition to activating your equipment warranty, product registration will grant you access to important product updates, streamlined customer service and more.

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- ☑ Equipment Warranty Activation
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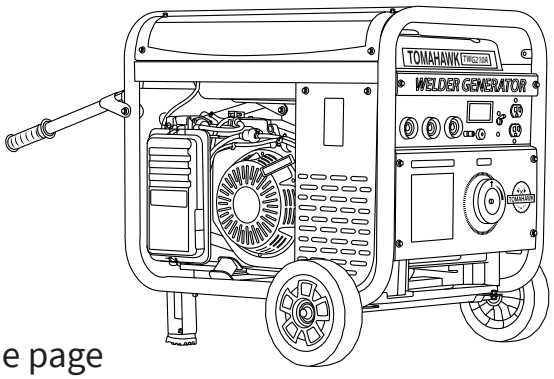

STEPS TO REGISTER YOUR EQUIPMENT

1. Visit www.tomahawk-power.com
2. Choose “Product Registration” at the bottom of the page
3. Enter your equipment’s serial number to get started
4. Provide all required information
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Choose “Service Request” at the bottom of www.tomahawk-power.com

This manual provides information and procedures to safely operate and maintain this equipment. For your own safety and protection from injury, carefully read, understand, and observe the safety instructions described in this manual.

Keep this manual or a copy of it with the equipment. If you lose this manual or need an additional copy, please contact Tomahawk Power, LLC or visit www.tomahawk-power.com This equipment is built with user safety in mind; however, it can present hazards if improperly operated or serviced. Follow operating instructions carefully. If you have questions about operating or servicing this equipment, contact TOMAHAWK®.

The information contained in this manual is based on equipment's production at the time of publication. TOMAHAWK® reserves the right to change any portion of this information without notice.

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1. SAFETY INFORMATION

This manual contains DANGER, WARNING, CAUTION, and NOTE callouts which must be followed to reduce the possibility of personal injury, damage to the equipment, or improper service.



This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.



DANGER indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.



WARNING indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.



CAUTION indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

1.1 Operating Safety

Familiarity and proper training are required for the safe operation of equipment! Equipment operated improperly or by untrained personnel can be dangerous! Read the operating instructions contained in both this manual and the engine manual and familiarize yourself with the location and proper use of all controls. Inexperienced operators should receive instruction from someone familiar with the equipment before being allowed to operate the machine.

1.1.1 NEVER allow anyone to operate this equipment without proper training. People operating this equipment must be familiar with the risks and hazards associated with it.
1.1.2 ALWAYS Be safety-conscious by dressing appropriately during operation. Always wear protective footwear, safety glasses/eyeware, and a hard hat.
1.1.3 NEVER touch live electrical parts on the welder generator.
1.1.4 ALWAYS wear body protection.
1.1.5 ALWAYS wear dry, hole-free insulating gloves.
1.1.6 NEVER touch electrode holders if you are in contact with the work, ground it directly with a separate cable.
1.1.7 DO NOT start operating without completing daily maintenance checks.
1.1.8 DO NOT connect more than one electrode or work cable to any single weld output terminal.
1.1.9 DO NOT drape cables over your body.
1.1.10 DO NOT use AC output in damp areas.
1.1.11 NEVER use accessories or attachments that are not recommended by Tomahawk Power. Damage to equipment and injury to the user may result.
1.1.12 NEVER leave machine running unattended.
1.1.13 ALWAYS be sure operator is familiar with proper safety precautions and operation techniques before using machine.
1.1.14 ALWAYS wear ANSI Z87.1-approved safety goggles or safety glasses with side shields, or when needed, a face shield. Use a dust mask in dusty work conditions. Also use non-skid safety shoes, hardhat, gloves, dust collection systems, and hearing protection when appropriate. This applies to all persons in the work area.
1.1.15 ALWAYS store equipment properly when it is not being used. Equipment should be stored in a clean, dry location out of the reach of children.
1.1.16 DO NOT modify or remove safety devices. DO NOT operate machine if any safety devices or guards are missing or inoperative.
1.1.17 ALWAYS read, understand, and follow procedures in Operator's Manual before attempting to operate equipment

1.2 Arc Welding Safety

1.2.1 DO NOT touch live electrical parts.



DANGER Contact with live electrical parts can result in fatal shocks or severe burns. The electrode and work circuit are live whenever the output is active. The input power circuit and internal machine circuits are also live when the power is on. In wire welding, the wire, wire reel, drive roll housing, and all metal parts in contact with the welding wire are live. Equipment that is improperly installed or not properly grounded is hazardous.



WARNING Arc rays can cause burns to the eyes and skin.

1.2.2 ALWAYS wear dry, hole-free insulating gloves and body protection.
1.2.3 ALWAYS avoid contact with live electrical components.
1.2.4 ALWAYS use dry, intact insulating gloves and appropriate body protection.
1.2.5 ALWAYS isolate yourself from the workpiece and ground using dry insulating mats or covers that are large enough to prevent any physical contact with the work or ground.
1.2.6 DO NOToperate AC output in wet areas, confined spaces, or if there's a risk of falling.
1.2.7 ONLY use AC output if it is necessary for the welding operation.
1.2.8 ALWAYS confirm the grounding of the power supply — ensure the ground wire of the input power cord is properly connected to the ground terminal in the disconnect box, or that the plug is connected to a properly grounded outlet.
1.2.9 ALWAYS double-check all connections, when making input connections. Always connect the proper grounding conductor first.
1.2.10 ALWAYS keep cables dry, free from oil and grease, and shielded from hot metal and sparks.
1.2.11 ALWAYS regularly inspect the input power cord for any damage or exposed wires — replace the cord immediately if damaged — exposed wires are dangerous.
1.2.12 ALWAYS turn off all equipment when not in use.
1.2.13 DO NOT use cables that are worn, damaged, undersized, or poorly spliced.
1.2.14 ALWAYS avoid draping cables over your body.

NOTE: If grounding the workpiece is necessary, ground it directly with a separate cable.

1.2.15 DO NOT touch the electrode if you are in contact with the workpiece, ground, or another electrode from a different machine.
1.2.16 ONLY use equipment that is in good condition. Repair or replace damaged parts immediately. Maintain the unit as per the manual.
1.2.17 DO NOT touch electrode holders connected to two different welding machines simultaneously, as this will result in double open-circuit voltage.

1.2.18 ALWAYS use a safety harness when working above ground level.
1.2.19 ALWAYS ensure all panels and covers are securely in place.
1.2.20 ALWAYS secure the work cable with good metal-to-metal contact to the workpiece or worktable as close to the weld as possible.
1.2.21 ALWAYS insulate the work clamp when it is not connected to the workpiece to avoid contact with any metal object.
1.2.22 DO NOT connect more than one electrode or work cable to a single weld output terminal. Disconnect cables for processes that are not in use.

NOTE: Inverter power sources retain significant DC voltage after the engine is stopped.

1.2.23 STOP the engine on the inverter and discharge input capacitors.
1.2.24 AVOID touching hot parts with bare hands.



WARNING Hot areas. May result in burns.

1.2.25 Allow time for cooling before working on equipment.
1.2.26 Use appropriate tools and/or wear heavy, insulated welding gloves and clothing to handle hot parts and prevent burns.



WARNING Flying metal or dirt can cause eye injuries.

NOTE: Welding, chipping, wire brushing, and grinding create sparks and flying metal. Cooling welds can expel slag.

1.2.27 ALWAYS wear approved safety glasses with side shields, even under your welding helmet.



WARNING Fumes and gases can pose a serious life hazards.
Welding produces hazardous fumes and gases.

1.2.28 ALWAYS keep your head away from the fumes. Do not inhale the fumes.
1.2.29 ALWAYS ensure proper ventilation in the workspace and/or use local forced ventilation at the arc to remove welding fumes and gases.
1.2.30 ALWAYS wear an approved air-supplied respirator, if ventilation is inadequate,
1.2.31 ONLY work in a confined space only if it is well-ventilated or while wearing an air-supplied respirator. Always have a trained watch person nearby. Welding fumes and gases can displace air and lower oxygen levels, causing injury or death. Ensure the breathing air is safe.

1.2.32 AVOID welding near degreasing, cleaning, or spraying activities.
1.2.33 The heat and light from the arc can interact with vapors to create highly toxic and irritating gases.
1.2.34 DO NOT weld on coated metals, such as galvanized, lead, or cadmium-plated steel, unless the coating is removed from the welding area, the area is well-ventilated, and you are wearing an air-supplied respirator. The coatings and any metals containing these elements can release toxic fumes when welded.
1.2.35 ALWAYS turn off the compressed gas supply when not in use.
1.2.36 ALWAYS ventilate confined spaces or use an approved air-supplied respirator.

NOTE: The arc rays from welding produce intense visible and invisible (ultraviolet and infrared) rays that can burn eyes and skin. Sparks are also emitted from the weld. Arc rays can cause eye and skin burns.

1.2.37 ALWAYS wear an approved welding helmet with the proper shade of filter lenses to protect your face and eyes from arc rays and sparks when welding or observing. Also, wear approved safety glasses with side shields under your helmet.
1.2.38 ALWAYS use protective screens or barriers to shield others from the flash, glare, and sparks; inform others not to look at the arc.


DANGER

DANGER Gas build up can cause serious injury or death.

1.2.39 ALWAYS wear protective clothing made from durable, flame-resistant materials (leather, heavy cotton, or wool) and appropriate foot protection.
1.2.40 ALWAYS keep your hands away from the engine fan. Do not attempt to override the governor or idler by pushing on the throttle control rods while the engine is running.
Electric and Magnetic Fields (EMF) May Be Hazardous

NOTE: Localized EMFs can occur. Welders with pacemakers should consult their physician before welding.

1.2.41 ALWAYS keep the electrode and work cables together. Secure them with tape when possible.
1.2.42 NEVER coil the electrode lead around your body.
1.2.43 DO NOT position your body between the electrode and work cables. If the electrode cable is on your right side, the work cable should also be on your right side.
1.2.44 ALWAYS connect the work cable to the workpiece as close as possible to the welding area.
1.2.45 AVOID working near the welding power source.

1.3 Service Safety

Poorly maintained equipment can become a safety hazard! In order for the equipment to operate safely and properly over a long period of time, periodic maintenance and occasional repairs are necessary.



DANGER Using a generator indoors can be fatal within minutes.
Generator exhaust contains carbon monoxide, a deadly, odorless gas.

1.3.2 NEVER operate a generator inside a home or garage, even if doors and windows are open.
1.3.3 ONLY use the generator outside, far from windows, doors, and vents.
1.3.4 ALWAYS be aware of other generator hazards.

NOTE: The electrode and work (or ground) circuits are electrically live when the welder is on.

1.3.5 DO NOT touch these live parts with bare skin or wet clothing.
1.3.6 ONLY Wear dry, hole-free gloves to protect your hands.
1.3.7 ALWAYS insulate yourself from the workpiece and ground using dry insulation.
1.3.8 ALWAYS ensure the insulation is large enough to cover your entire contact area with the workpiece and ground.

NOTE: If welding must be performed under electrically hazardous conditions (in damp locations, wearing wet clothing, on metal structures such as floors, gratings, or scaffolds, in cramped positions such as sitting, kneeling, or lying down, or if there is a high risk of accidental contact with the workpiece or ground), use the following equipment:

- Semiautomatic DC Constant Voltage (Wire) Welder
- DC Manual (Stick) Welder
- AC Welder with Reduced Voltage Control

1.3.8 ALWAYS use a safety harness to prevent falls when working above ground level, in case of electric shock.
1.3.10 ALWAYS take special precautions when using compressed gases at the job site to avoid hazardous situations.
1.3.11 DO NOT heat, cut, or weld tanks, drums, or containers until proper safety measures are taken to prevent the release of flammable or toxic vapors.
NOTE: Tanks, drums, or containers can explode even if they have been cleaned.
1.3.12 ALWAYS vent hollow castings or containers before heating, cutting, or welding, as they may explode.



DANGER Cylinder may explode if damaged.

NOTE: Sparks and spatter are emitted from the welding arc. Wear oil-free protective clothing such as leather gloves, a heavy shirt, cuffless trousers, high shoes, and a cap to cover your hair. Use earplugs when welding in confined spaces or out of position. Always wear safety glasses with side shields in a welding area.

1.3.13 ALWAYS attach the work cable to the workpiece as close to the welding area as possible. Connecting work cables to the building framework or other locations away from the welding area increases the risk of the welding current passing through lifting chains, crane cables, or other alternate paths. This can create fire hazards or cause lifting chains or cables to overheat and fail.

1.3.14 DO NOT attempt to clean or service machine while it is running.
1.3.15 ALWAYS replace worn or damaged components with spare parts designed and recommended by Tomahawk Power.
1.3.16 ALWAYS keep machine clean and labels legible. Replace all missing and hard-to-read labels. Labels provide important operating instructions and warn of dangers and hazards.
1.3.17 ALWAYS check for damaged parts before each use. Carefully check that the equipment will operate properly and perform its intended function. Replace damaged or worn parts immediately. Never operate the buggy with a damaged part.
1.3.18 ALWAYS inspect the machine prior to placing in storage and before re-use. Store the machine in a dry, secure place out of the reach of children.
1.3.19 ALWAYS use only accessories that are recommended by the manufacturer for use with the machine. Accessories that may be suitable for one machine may create a risk of injury when used with the machine.

2. TECHNICAL PERFORMANCE

The Tomahawk TWG210A Generator / Welder is designed for high power and durability. Ideal for farms, construction sites, or any job that requires electrical power and CC (constant current) stick welding. Producing up to 210 Amps with a 60% duty cycle, it is suitable for welding from 6010 rods up to 7024 rods. Convenient back wheels allow for maneuverability for portable onsite welding and can also be used for emergency back-up power when necessary.

3. SPECIFICATIONS

TWG210A WELDER	
Mode	MMA and TIG 210
Welding Current	40 - 120
Rod Types	6010- 7024
Welding Rod Length	2.0 - 3.2 mm
Diameter	3/32 - 1/4
Duration of Load	60%
Connector Type	Dinse: DKJ 16-55

TWG210A GENERATOR	
Engine	TOMAHAWK
Horsepower	15
Voltage	120v
Max Power	2200 Watts AC
Rated Power	2000 Watts AC
Generator Type	Inverter (PMG)

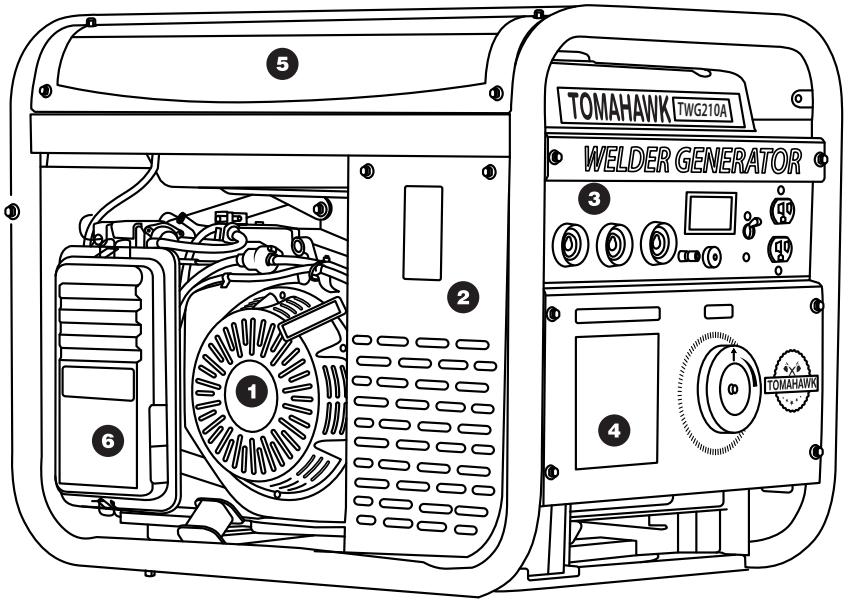
NOTE: Tools runs simultaneously as welding

TWG210A ENGINE	
Fuel Tank Capacity	6.34 qt
Oil Tank Capacity	0.6 qt
Fuel Type	91+ Octane
Oil Type	SAE10W-30

TWG210A DIMENSIONS	
Length	28 in.
Width	21 in.
Height	23 in.
Weight	202 lbs.

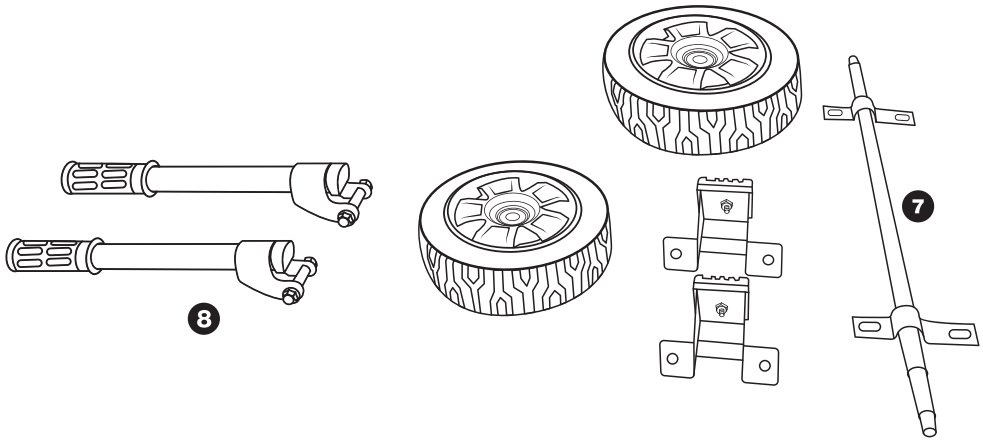
3.1 Welding Generator Parts

1. Engine
2. Generator
3. Welding Terminals
4. Control Panel
5. Fuel Tank
6. Air Filter
7. Wheel Kit Attachment
8. Handle Attachment



Tools Required

1. 10 mm Wrench
2. 13 mm Socket Wrench
3. 19 mm Socket Wrench
4. 04 mm Allen Wrench



3.2 Unpacking the Unit

Make sure to carefully remove all parts and accessories from the box. Ensure all parts listed in the manual are in the box. Do not throw away the packaging or packing material until you have inspected all parts and successfully operated the machine. Do not discard this operations manual.

If any parts are missing or damaged, please contact TOMAHAWK® customer support by email at support@tomahawk-power.com or call (866) 577-4476.

4. ASSEMBLY

4.1 Wheel and Handle Kit Assembly

4.1.1 Attach the Feet(FIGURE 1):

- Align the studs on the foot bracket assembly with the holes on the bottom of the generator frame.
- Secure in place with two hex flange nuts.
- Repeat for the other foot bracket assembly.

4.1.2 Assemble the Wheels(FIGURE 2):

- Insert the wheel axle through the bracket on the bottom of the generator frame, secure in place with the pin.
- Slide one wheel onto a wheel axle and secure all-in place with a washer and cap nut.
- Repeat steps for the other wheel.

4.1.3 Attach the Handle(FIGURE 3):

- Align the holes in the brackets on the handle with the holes on the generator frame.
- Fasten in place using a bolt and a nut, one set on each side of the handle.

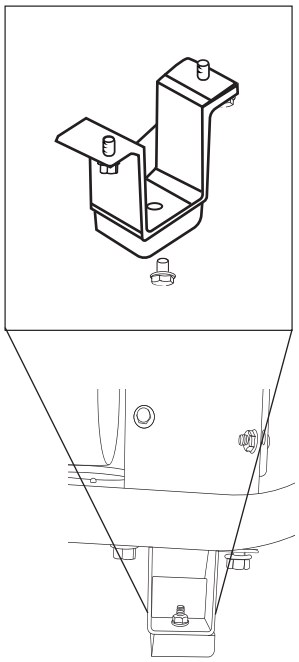


FIGURE 1

WARNING

WARNING Ensure all nuts and bolts are tightened properly to avoid accidents. Do not over-tighten screws as it may strip the threads.

FIGURE 3

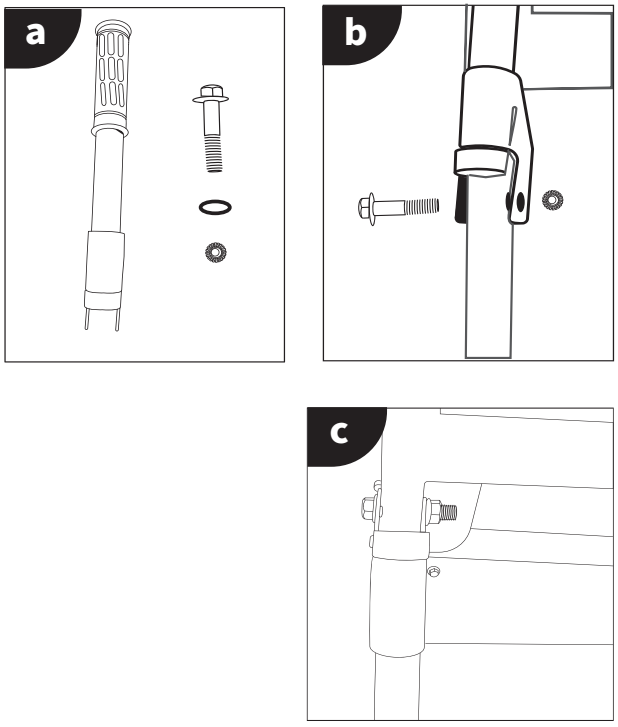
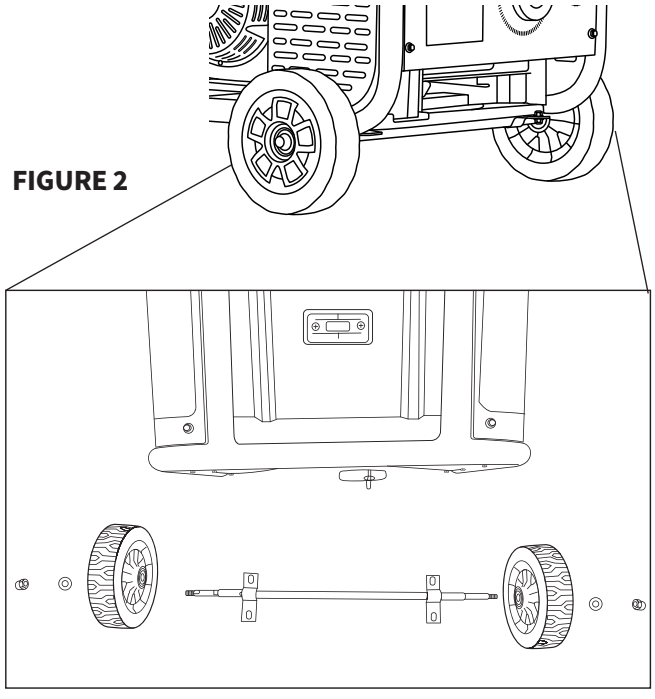


FIGURE 2



4.2 Cable Assembly

4.2.1 To connect the welding leads, begin by stripping 1” of rubber off the electrode holder cable. **FIGURE 4.**

4.2.2 Slide the red rubber guard over the top of the cable.

4.2.3 Wrap the exposed cable in a copper casing then insert into the welding plug. **FIGURE 4.**

4.2.4 Tighten the cable in place with a 4 mm allen wrench.

4.2.5 Slide up the rubber guard to snugly cover up the plug. **FIGURE 5.**

4.2.6 Repeat for the black rubber guard.

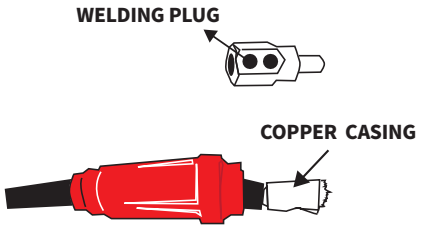


FIGURE 4

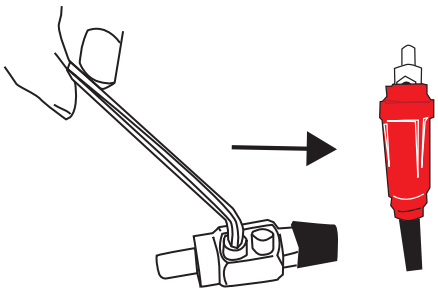


FIGURE 5

5. OPERATION

NOTE: Ensure both black and red rubbers are on before the plug is attached.

5.1 Oil and Fueling

5.1.1 Remove oil filter cap. Then check the dipstick. If this is your first time using the welder, fill the oil tank to the upper limit with SAE10W30 4-Stroke motor oil. **FIGURE 6.**

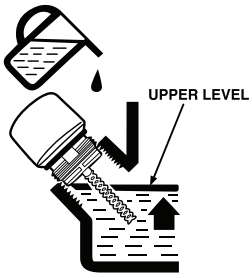
NOTE: The oil tank capacity on this unit is 0.6 gallons (0.56 liters). Do not overfill. **FIGURE 6.**

5.1.2 Reinstall oil cap securely.

5.1.3 Next, remove the fuel cap on top of the welder and fill to the upper level with unleaded gasoline with a pump octane rating of 89 or higher. **FIGURE 7.**

NOTE: The fuel tank capacity on this unit is 1.6 gallons (6 liters). Do not overfill.

5.1.4 Reinstall fuel cap securely.



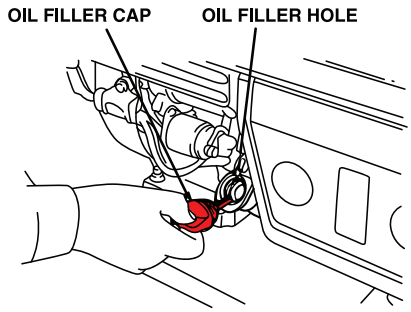


FIGURE 6

5.2 Starting Instructions

5.2.1 To start the welder, disconnect any tools or appliances from the terminals or outlets.

5.2.2 Open the fuel valve. **FIGURE 8.**

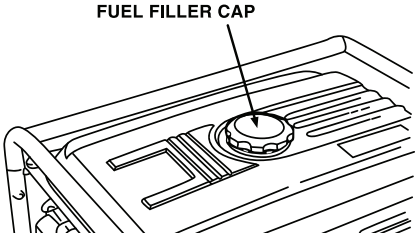


FIGURE 7

5.2.3 For a cold start, the choke will be in the CLOSED position. To OPEN, pull on the choke lever ring firmly position. **FIGURE 9.**

5.2.4 Turn the circuit breaker switch to the ON position. **FIGURE 10.**

5.2.5 Turn the engine switch to START. Once the generator is running turn it to the ON position. **FIGURE 11.**

5.2.6 If the battery does not start. Hold the top handle securely and pull the recoil starter grip until you feel resistance, then pull briskly. **FIGURE 12.**

5.1.7 Once the welder is running smoothly, connect your leads or devices to the proper outlets.

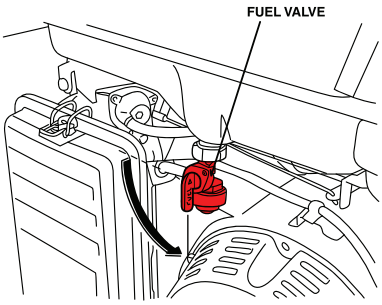


FIGURE 8

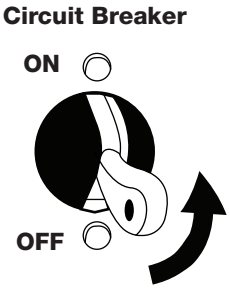


FIGURE 9

NOTE: Insert the ground lead into the negative terminal and the electrode lead into either the 80 amp positive terminal on the left or the 120 amp positive terminal on the right.

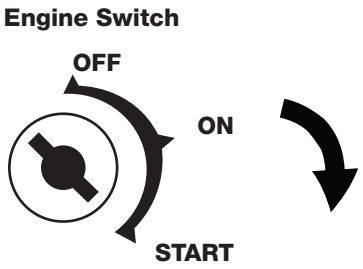


FIGURE 10

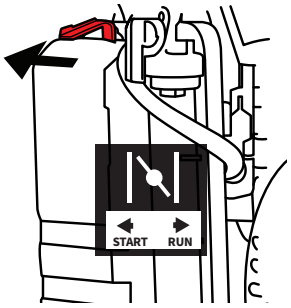


FIGURE 11

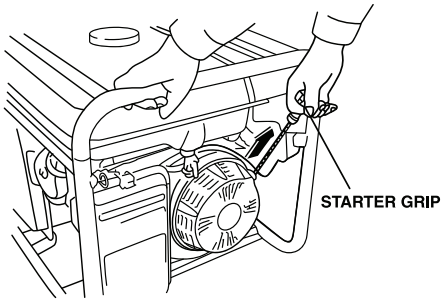


FIGURE 12

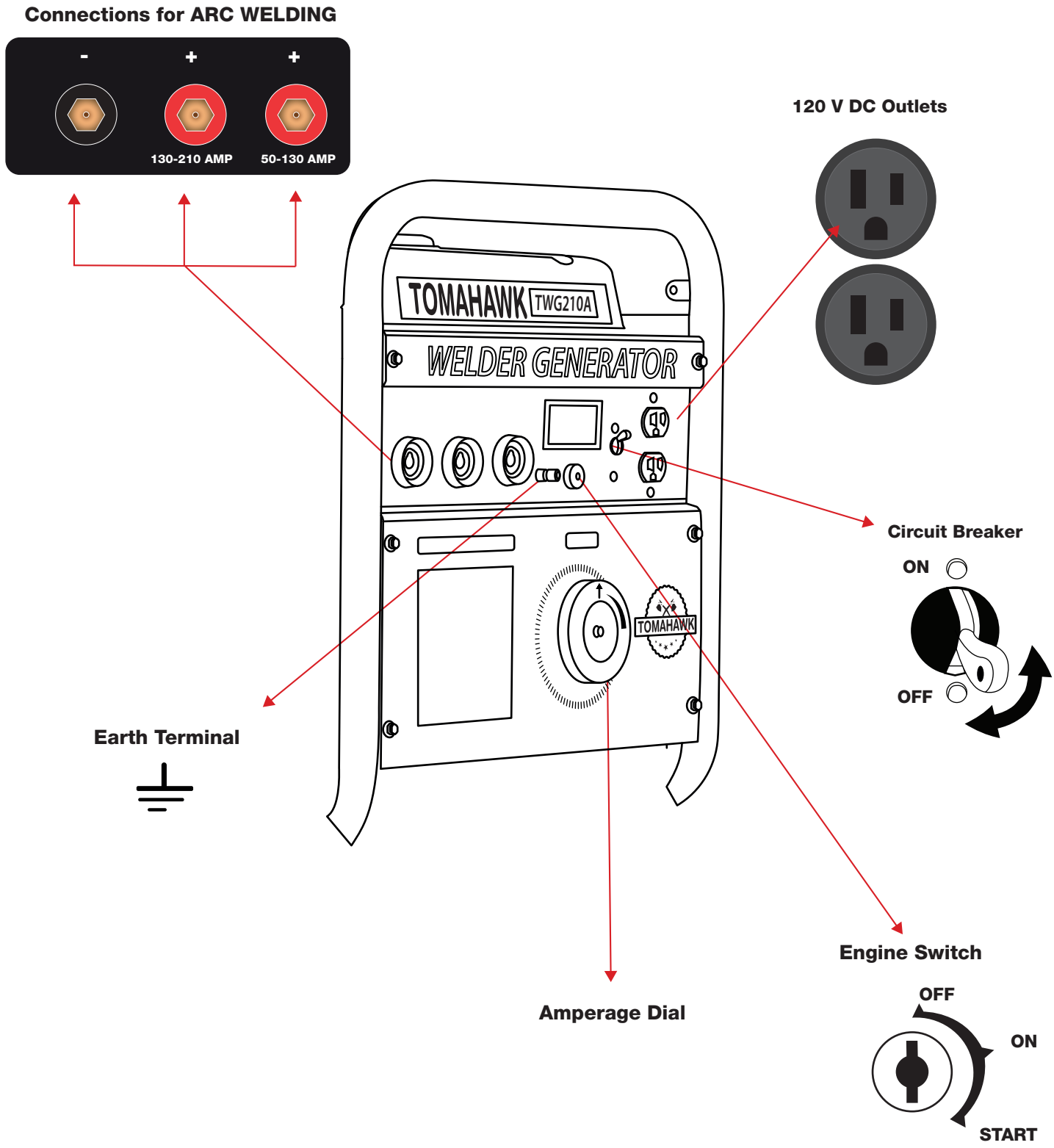
5.3 Recommended Information

RECOMMENDATIONS	
Nominal Voltage	12V
BCI Group Size	U1
Cold Crank Rating	195 Amperee Minimum
Reserve Capacity	8.8 Minutes Minimum

DIMENSIONS	
Length	197 mm (7 3/4 in) minimum
Width	132 mm (6 3/18 in) minimum
Height	188 mm (7 8/18O minimum

NOTE: Turn Engine Switch to OFF. Connect Negative (-) cable last.

5.4 Welder Generator Panel Display



6. SELECTING CABLE SIZES

6.1 Weld Cable Size and Total Cable (copper) Length in Weld Circuit Not Exceeding:

100 FT OR LESS		
Welding Amperes	**10-60% AWG**	**60-100% AWG**
100	4 (20)	4 (20)
150	3 (30)	3 (30)
200	3 (30)	2 (35)
250	2 (35)	1 (50)
300	1 (50)	1/0 (60)

10-100% AWG						
Welding Amperes	**150 ft**	**200 ft**	**250 ft**	**300 ft**	**350 ft**	**400 ft**
100	4 (20)	3 (30)	2(35)	1 (50)	1/0 (60)	1/0 (60)
150	2 (35)	1 (50)	1/0 (60)	2/0 (70)	3/0 (95)	3/0 (95)
200	1 (50)	1/0 (60)	2/0 (70)	3/0 (95)	4/0 (120)	4/0 (120)
250	1/0 (60)	2/0 (70)	3/0 (95)	4/0 (120)	2x2/0 (2x70)	2x2/0 (2x70)
300	2/0 (60)	3/0 (95)	4/0 (120)	2x2/0 (2x70)	2x3/0 (2x95)	2x3/0 (2x95)

NOTE: These charts are a general guideline and may not apply to all applications. If cables overheat, use the next larger size cable.

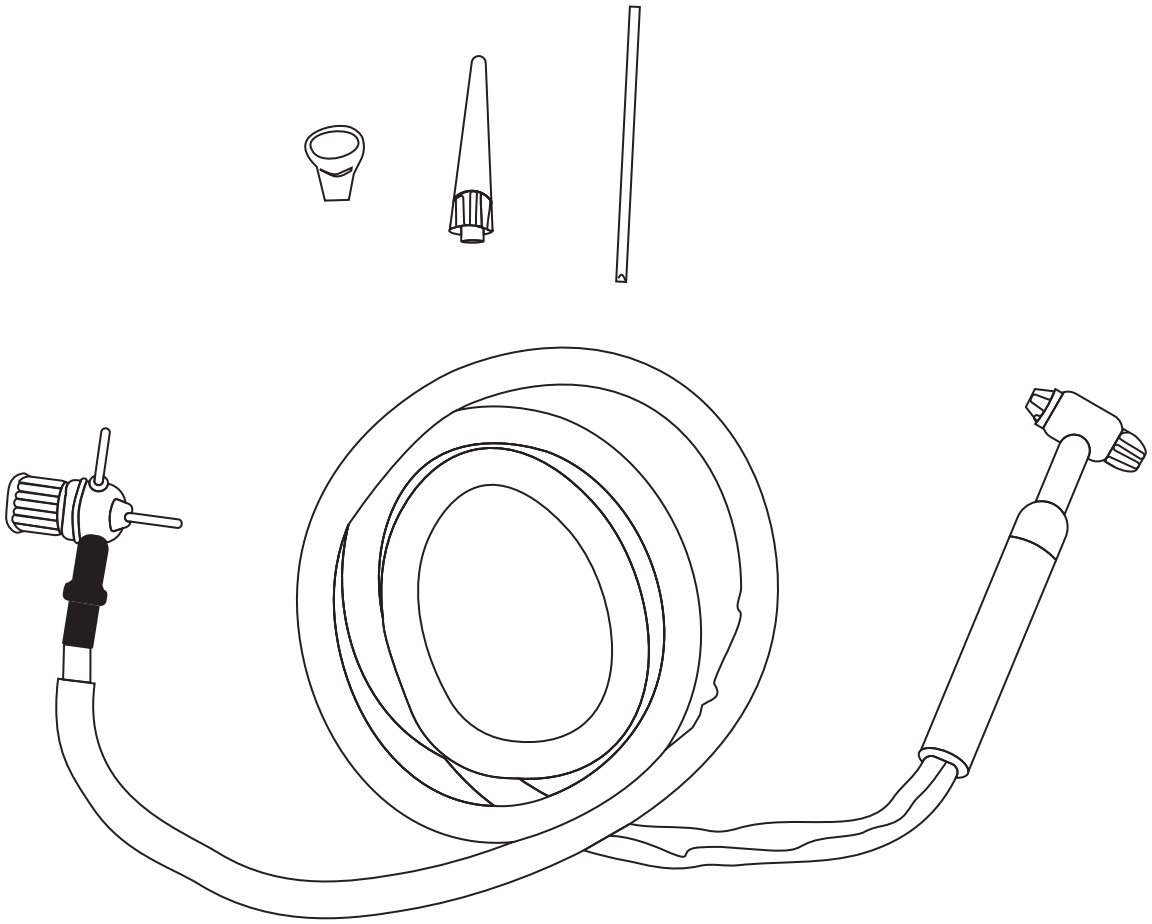
7. ELECTRODE SELECTION CHART

EP = Electrode Positive (Reverse Polarity)
EN = Electrode Negative (Straight Polarity)

ELECTRODE	DC	AC	POSITION	PENETRATION	USAGE
6010	EP		ALL	DEEP	MIN PREP, ROUGH HIGH SPATTER
6011	EP	X	ALL	DEEP	MIN PREP, ROUGH HIGH SPATTER
6013	EP, EN	X	ALL	LOW	GENERAL
7014	EP, EN	X	ALL	MED	SMOOTH EASY, FAST
7018	EP	X	ALL	MED	LOW HYDROGEN, STRONG
7024	EP, EN	X	FLAT HORIZ FILLET	LOW	SMOOTH, EASY, FASTER
NI-CL	EP	X	ALL	LOW	CAST IRON
308L	EP	X	ALL	LOW	STAINLESS

8. TIG TORCHES

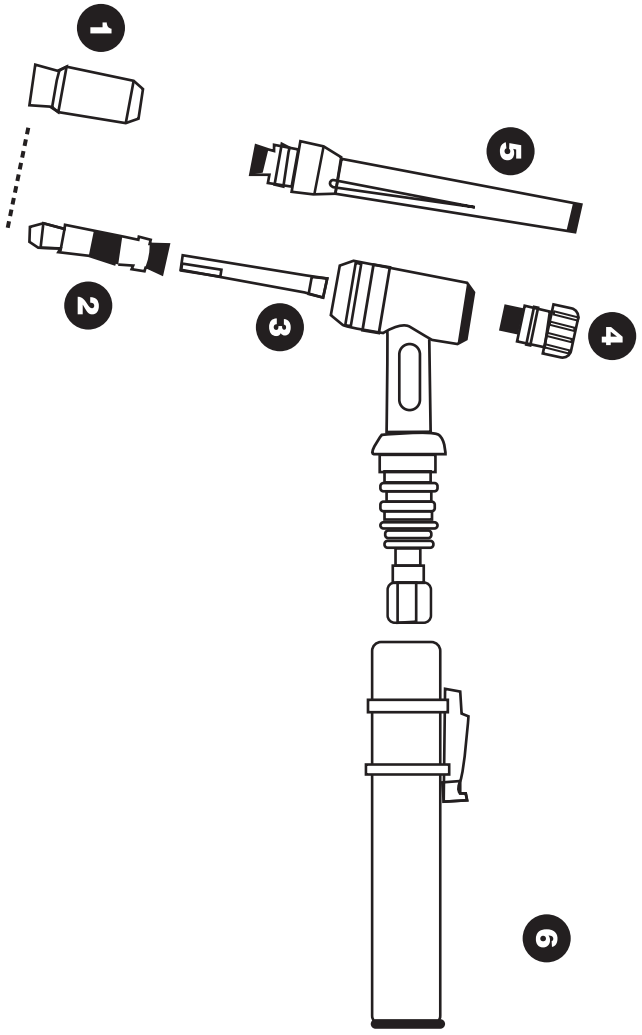
8.1 Technical Specifications



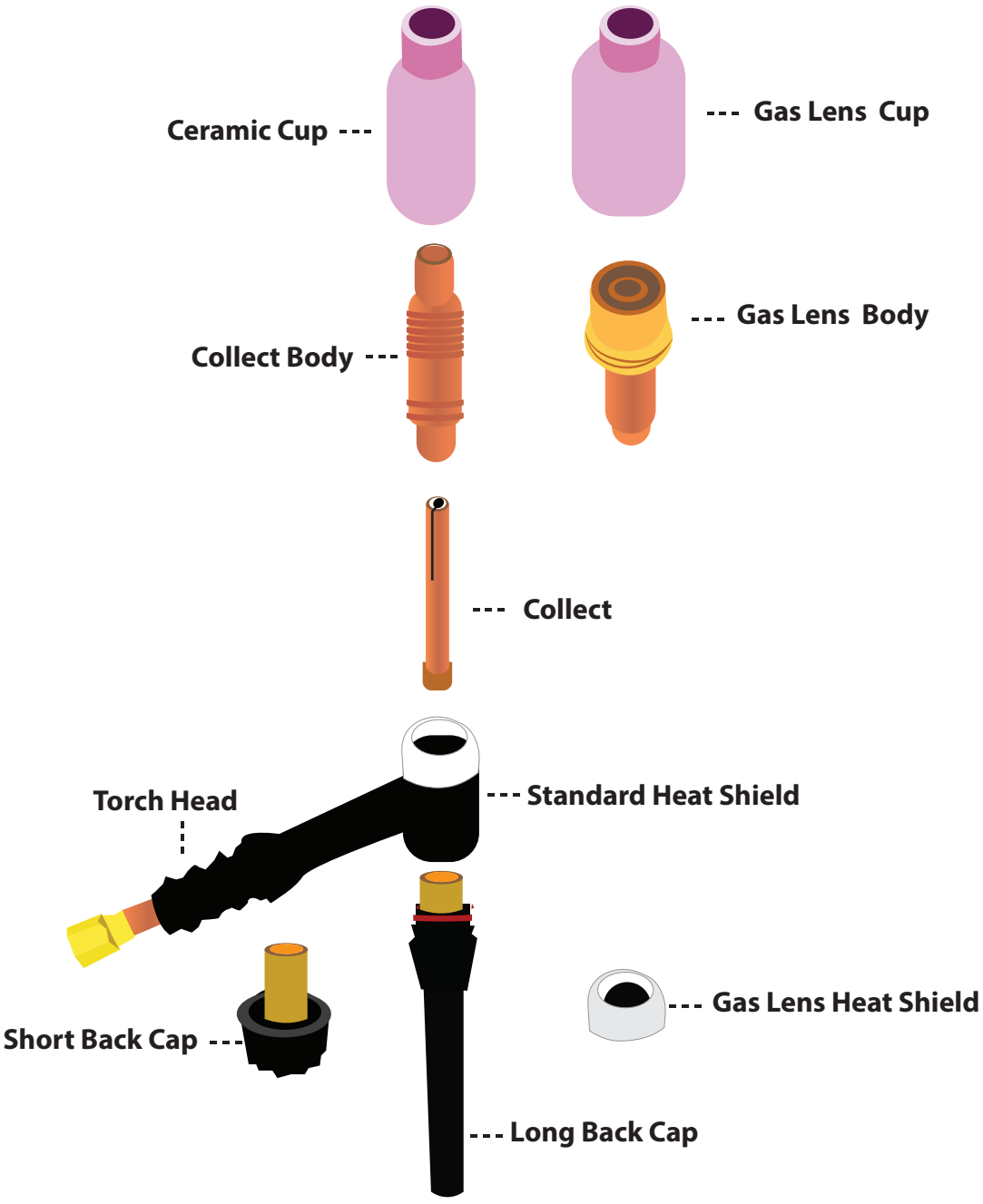
Model	TIG300A
Max Amperage	300 Amps
Cooling Method	Air-Cooled
Torch Cable Length	10ft (3.3m)
Torch Style	17V

8.2 Torch Diagram

Ķч Ceramic Nozzle
Ҡч Collect Body
Ңч Collect
Çч Short Back Cap
Yч Long Back Cap
Ұч TIG Torch Handle



9. KNOW YOUR CROSS VALVE (+)



10. TIG TORCH INSTALLATION

10.1 Remove the ground cable and the electrode holder from the weld output connections. Install the ground cable to the Positive (+) weld output connection. **FIGURE 13.**

10.2 Secure the ground clamp to the workpiece. **FIGURE 14.**

10.3 Connect a regulator to a bottle of ARGON gas. Then connect the gas connection from the TIG torch to the regulator. (Reference TIG torch and ARGON gas manufacturer manual for proper connection method).

10.4 Connect the TIG torch weld cable to the Negative (-) weld output connection. **FIGURE 15.**

10.5 Set the desired amperage on the amperage control knob on the front panel of the welder. **FIGURE 16.**

10.6 Turn on the input power switch on the welder. **FIGURE 17.**

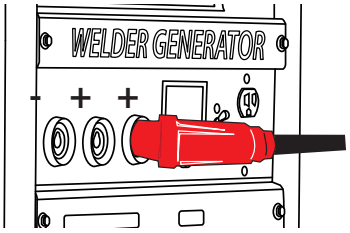


FIGURE 13

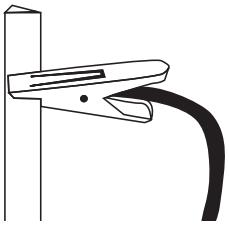


FIGURE 14

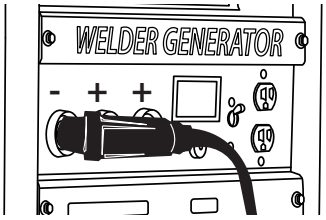


FIGURE 15

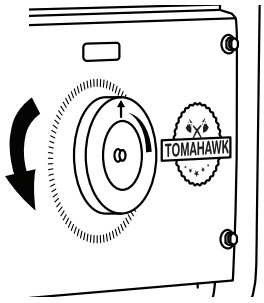


FIGURE 16

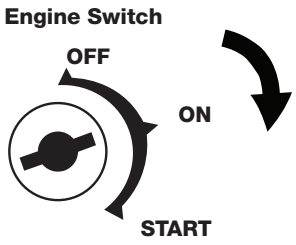


FIGURE 17

CAUTION

CAUTION Be aware that the TIG torch will be electrically HOT when the Input Power Switch on the welder is turned on.

11. STORAGE

11.1 Clean and Inspect Thoroughly: Clean the generator to remove any dirt and grease buildup. Inspect it for any signs of damage, such as loose bolts or frayed wires, and address these issues as needed.

11.2 Prepare the Fuel System: Either drain the fuel tank and run the generator until it stops to clear any fuel from the system, or add a fuel stabilizer if it will be stored for less than six months. Always perform fuel-related tasks in a well-ventilated area to ensure safety.

11.3 Lubricate and Store Correctly: Add a small amount of clean engine oil into the cylinder and pull the starter gently to distribute the oil, preventing rust and corrosion. Store the generator in a cool, dry, and well-ventilated space, such as a garage or outdoor shed.

12. WELDING 101

12.1 Stick Welding Guideline

12.1.2 Preparation

- **Safety First:** Wear your welding helmet, gloves, and fire-resistant clothing to protect yourself from sparks, UV rays, and heat.
- **Clean the Workpiece:** Use a wire brush or grinder to clean the metal surfaces you plan to weld. This ensures better weld quality.
- **Clamp the Workpiece:** Secure your metal pieces firmly using clamps to prevent movement during welding.

12.1.3 Setting Up the Welding Machine

- **Select the Electrode:** Choose an electrode suitable for the metal type and thickness, detailed in Section 7.
- **Adjust the Settings:** Set the welding machine to the appropriate current for your electrode and metal thickness. As a rule of thumb, use 1 amp per 0.001 inch of electrode diameter.

12.1.4 Striking the Arc

- **Hold the Electrode Holder:** Hold the electrode holder at a slight angle (10-15 degrees) to the workpiece.
- **Strike the Arc:** Tap the electrode against the metal surface as if lighting a match to initiate the arc. Once the arc is established, maintain a consistent gap between the electrode and the workpiece (about 1/8 inch).

12.1.5 Welding the Joint

- **Maintain a Steady Speed:** Move the electrode steadily along the joint, keeping the arc length consistent.
- **Control the Weld Pool:** Watch the molten pool of metal and ensure it flows smoothly into the joint.
- **Weave or Stringer Bead:** Depending on the joint type, use a weaving motion (side to side) for wider joints or a stringer bead (straight line) for narrow joints.

12.1.6 Finishing the Weld

- **Chip Off the Slag:** After completing the weld, let it cool slightly. Use a chipping hammer to remove the slag covering the weld bead.
- **Clean the Weld:** Use a wire brush to clean the weld area, ensuring no slag or debris remains.

12.1.7 Welding Tips

- **Electrode Storage:** Store electrodes in a dry place to prevent moisture absorption, which can cause welding defects.
- **Practice:** Practice on scrap metal to improve your technique before welding critical joints.
- **Inspect Welds:** Always inspect your welds for consistency, penetration, and defects.



CAUTION Weld current starts when electrodes touches work piece



CAUTION Always wear appropriate personal protective clothing.



CAUTION Weld current can damage electronic parts in vehicles. Disconnect both battery cables before welding on a vehicle. Place work clamp as close tot he weld as possible.

13. Types of Groove Welds

13.1 Single Groove Welds: Applied to one side, considered complete joint penetration (CJP).**FIGURE 18.**

- **Square Groove:** Simple preparation, minimal deformation, used for thin plates.



FIGURE 18

- **V-Groove:** Easy to machine, can cause significant angular deformation, requires more welding for thicker plates. **FIGURE 19.**
- **J-Groove:** Curved single-sided bevel, less filler material, good for thick plates. **FIGURE 20.**
- **U-Groove:** Rounded sides, complex machining, reduces welding for very thick plates. **FIGURE 21.**



FIGURE 19



FIGURE 20



FIGURE 21

13.2 Double Groove Welds: Apply a weld to both sides of the one of the single grove welds joints(V,J, or U). To create a symmetrical joint preparation. Example shown in **FIGURE 22.**



FIGURE 22

NOTE: Groove angle and Root opening: Affects weld quality and penetration.

14. WELDING TEE JOINTS

Welding tee joints involves joining two pieces of metal at a right angle to form a "T" shape.

14.1 Steps to Weld Tee Joints

14.1.2 Prepare Materials

- Clean the metal surfaces to remove impurities. Use an angle grinder to remove mill scale, dirt, and paint.

14.1.2 Position and Tack Weld

- Secure the pieces in place.

14.1.3 Lay the Bead

- Choose the appropriate welding method (stick, MIG, or TIG).
- Apply a consistent bead along the joint, ensuring proper penetration.

14.1.4 Grind and Finish

- Remove any slag or unevenness with a grinder.
- Finish the weld for a smooth appearance if necessary.

14.2 Types of Welds for Tee Joints

14.2.1 Fillet Weld: Common for basic joints.

14.2.2 Beveled Weld: Used for thicker materials for better penetration.

14.2.3 J-Weld: Provides additional strength with more material contact.

NOTE: Practice steady movements with the welding gun. Ensure proper alignment to avoid weak joints.

15. WELD TEST

15.1 Destructive Testing

- **Tensile Test:** Measures the weld's strength by pulling it until it breaks.
- **Bend Test:** Assesses ductility and the presence of defects by bending the weld.
- **The Hammer Test:** Achieves this by striking the weld joint in the direction against the weld. A good weld bends over but does not break.
- **Macro Etch Test:** Reveals internal weld structure by etching the cross-section with acid.

15.2 Non-Destructive Testing (NDT)

- **Ultrasonic Testing (UT):** Uses sound waves to detect internal defects.
- **Radiographic Testing (RT):** X-rays or gamma rays reveal internal flaws.
- **Magnetic Particle Testing (MT):** Detects surface and near-surface discontinuities in ferromagnetic materials.
- **Dye Penetrant Testing (PT**): Identifies surface cracks using a dye and developer.

GOOD WELD	POOR WELD
Fine Spatter	Significant Spatter Accumulation
Uniform Bead	Irregular, Uneven Weld Bead
Moderate Crater During Welding*	Small Crater Formation During Welding
No Overlap	Excessive Overlap
Good Penetration into Base Metal	Inadequate Penetration

16. REPLACEMENT PARTS

16.1 For replacement parts and technical questions visit www.tomahawk-power.com or scan the QR code on the front of this manual.

16.2 Not all equipment components are available for replacement. The illustrations within this manual are a convenient reference to the location and position of parts in the assembly sequence.

16.3 When ordering parts, the following may be required: equipment model number, serial number/lot, date code, and description. The manufacturer reserves the right to make design changes and/or improvements to equipment, parts, accessories, and manuals without notice.

17. TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSES	SOLUTION
Porosity	Arc length too long.	Reduce arc length.
	Damp electrode.	Use dry electrode.
	Workpiece dirty.	Clean the work surface by removing all grease, oil, moisture, rust, paint, coatings, slag, and dirt before welding.
Excessive Spatter	Amperage too high for electrode.	Decrease amperage or select larger electrode.
	Arc length too long or voltage too high.	Reduce arc length or voltage.
Incomplete Fusion	Insufficient heat input.	Ensure Wires are Connected Properly. Check That Led Is Displaying Green Light.
	Improper welding technique.	Increase amperage. Select larger electrode and increase amperage.
		Place stringer bead in proper location(s) at joint during welding.
		Adjust work angle or widen groove to access bottom during welding.
		Momentarily hold arc on groove side walls when using weaving technique.
		Keep arc on leading edge of weld puddle.

PROBLEM	POSSIBLE CAUSES	SOLUTION
Incomplete Fusion	Workpiece dirty.	Remove all grease, oil, moisture, rust, paint, coatings, slag, and dirt from work surface before welding.
Lack of Penetration	Improper weld technique.	Select lower amperage. Use smaller electrode.
	Insufficient heat input.	Increase and/or maintain steady travel speed.
		Increase amperage. Select larger electrode and increase amperage.
		Reduce travel speed.
Excessive Penetration	Excessive heat input.	Increase and maintain a consistent travel speed.
		Choose a lower amperage setting. Use a smaller electrode.
Burn-Through	Excessive heat input.	Increase and maintain a consistent travel speed.
Generator out of power or welding not working.	Check for faulty brushes.	Contact an authorized Tomahawk Power Service Center
	Open the lead in the field circuit.	
	Examine the field rectifier for issues.	
	Test the capacitor for faults.	
	Check the stator field winding for defects.	
	Inspect the rotor for any problems.	
	Clean the slip rings when they are not in use if they are dirty.	
Generator power is available but unit does not weld.	Workpiece is not connected.	
	Electrode holder is loose.	
	Loose connection at the output stud.	
	No open circuit voltage at the output studs; there is an open lead in the weld circuit.	
	Malfunctioning reactor.	
Engine runs erratically or stops running.	The engine is not fully warmed up, and the choke is in the fully open position.	
	The engine requires servicing, including the head, carburetor, filters, oil, spark plug, and/or gas.	
Engine sputters but will not start.	Faulty gas, filter, air cleaner, spark plug, and/or breather.	

16. MAINTENANCE RECORD

TOMAHAWK® tools are assembled with care and will provide years of service when properly maintained. Preventative maintenance and routine service are essential to the long life of your welding generator. Adhere to reading through this manual thoroughly. You will find that you can do some of the regular maintenance yourself. However, when in need of parts or major service, be sure to contact a TOMAHAWK® Technician. For your convenience we have provided this space to record relevant data about your TOMAHAWK® equipment.

Invoice Number:		Type of Machine:	
Date Purchased:		Dealer Name:	
Serial Number:		Dealer Phone:	

REPLACEMENT PARTSUSED					MAINTENANCE LOG	
PART NO.	DESCRIPTION	QTY	COST	DATE	DATE	OPERATION

18. EQUIPMENT WARRANTY

Your new TOMAHAWK® equipment is warranted to the original purchaser for a period of one-year (12 months) from the original date of purchase. The TOMAHAWK® warranty is against defects in design, materials and workmanship.

The following are not covered under the warranty:

19.1.1 Damage caused by abuse, misuse, dropping or other similar damage caused by or as a result of failure to follow assembly, operation or user maintenance instructions.

19.1.2 Alterations, additions or repairs carried out by persons other than TOMAHAWK® or their recognized agents.

19.1.3 Transportation or shipment costs to and from TOMAHAWK® or their recognized agents, for repair or assessment against a warranty claim, on any machine.

19.1.4 Materials and/or labor costs to renew, repair or replace components due to fair wear and tear.

19.1.5 TOMAHAWK® and/or their recognized agents, directors, employees or insurers will not be held liable for consequential or other damages, losses or expenses in connection with or by reason of or the inability to use the machine for any purpose.

Warranty Claims

Before submitting any warranty claim, you will need to register your new TOMAHAWK® equipment through www.tomahawk-power.com.

Follow the steps on page 3 or scan this QR codes to complete the equipment registration. After registration is complete, all warranty claims should firstly be directed to TOMAHAWK® through the online Service Request form found at www.tomahawk-power.com/pages/service-request.

20. SERVICES CENTERS

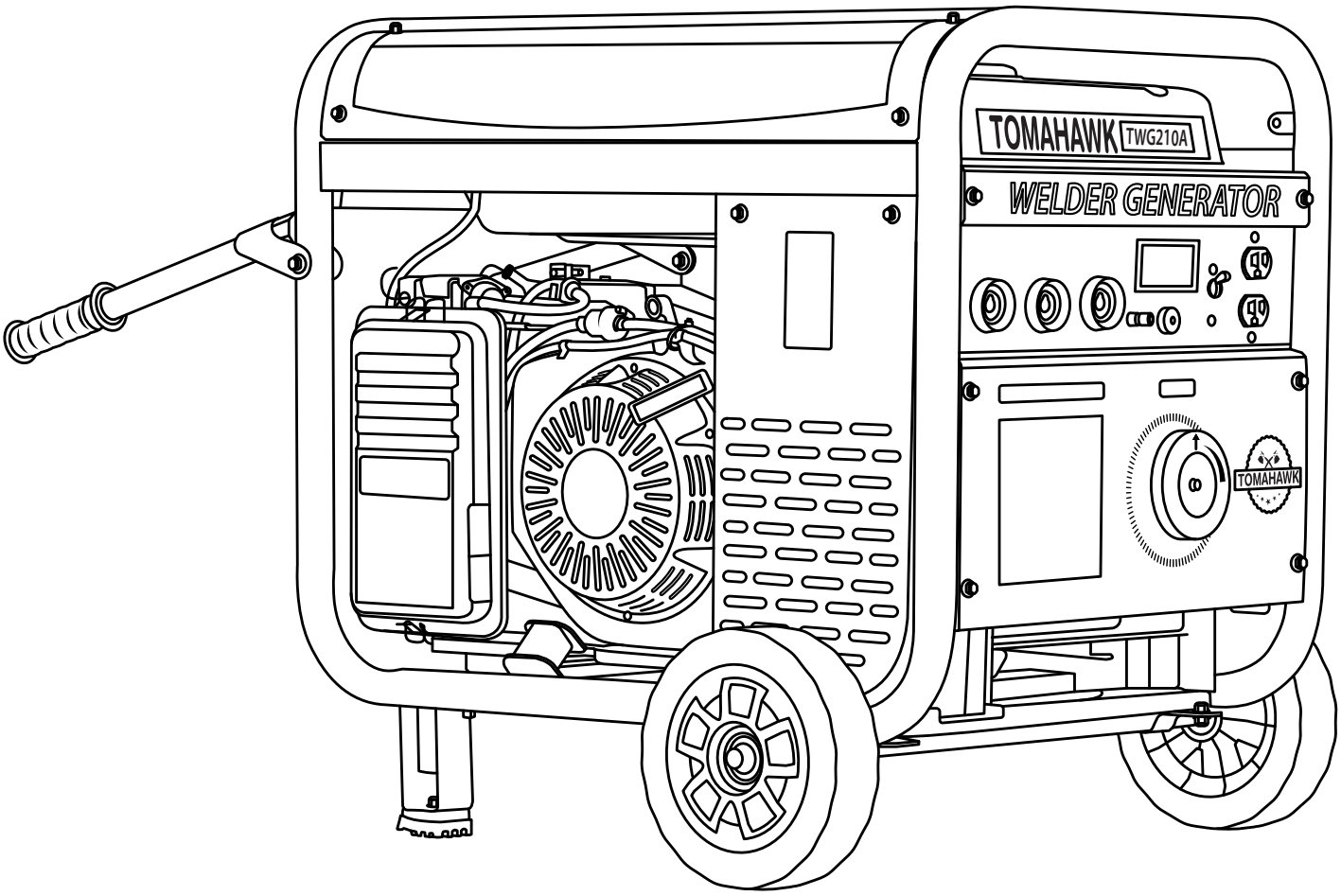
Our service centers are equipped to handle your equipment maintenance and repair needs efficiently. With a network of authorized local service locations , you can find expert support and genuine parts needed to keep your equipment running smoothly. All locations are listed on the webpage https://tomahawk-power.com/pages/find-a-service-center.

TOMAHAWK

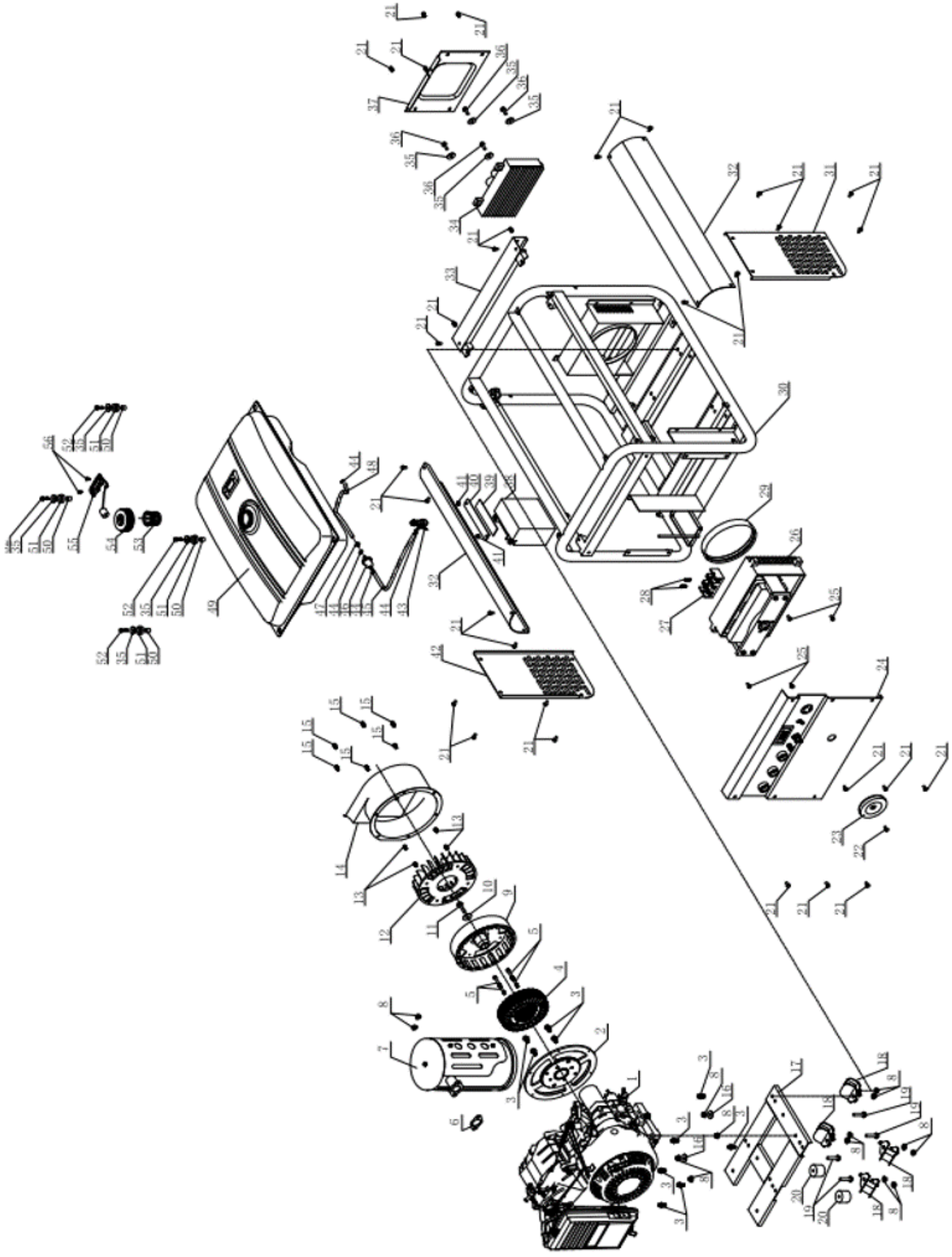
WELDER GENERATOR

MODEL NUMBER: TWG210A

Parts Manual



PARTS EXPLOSION

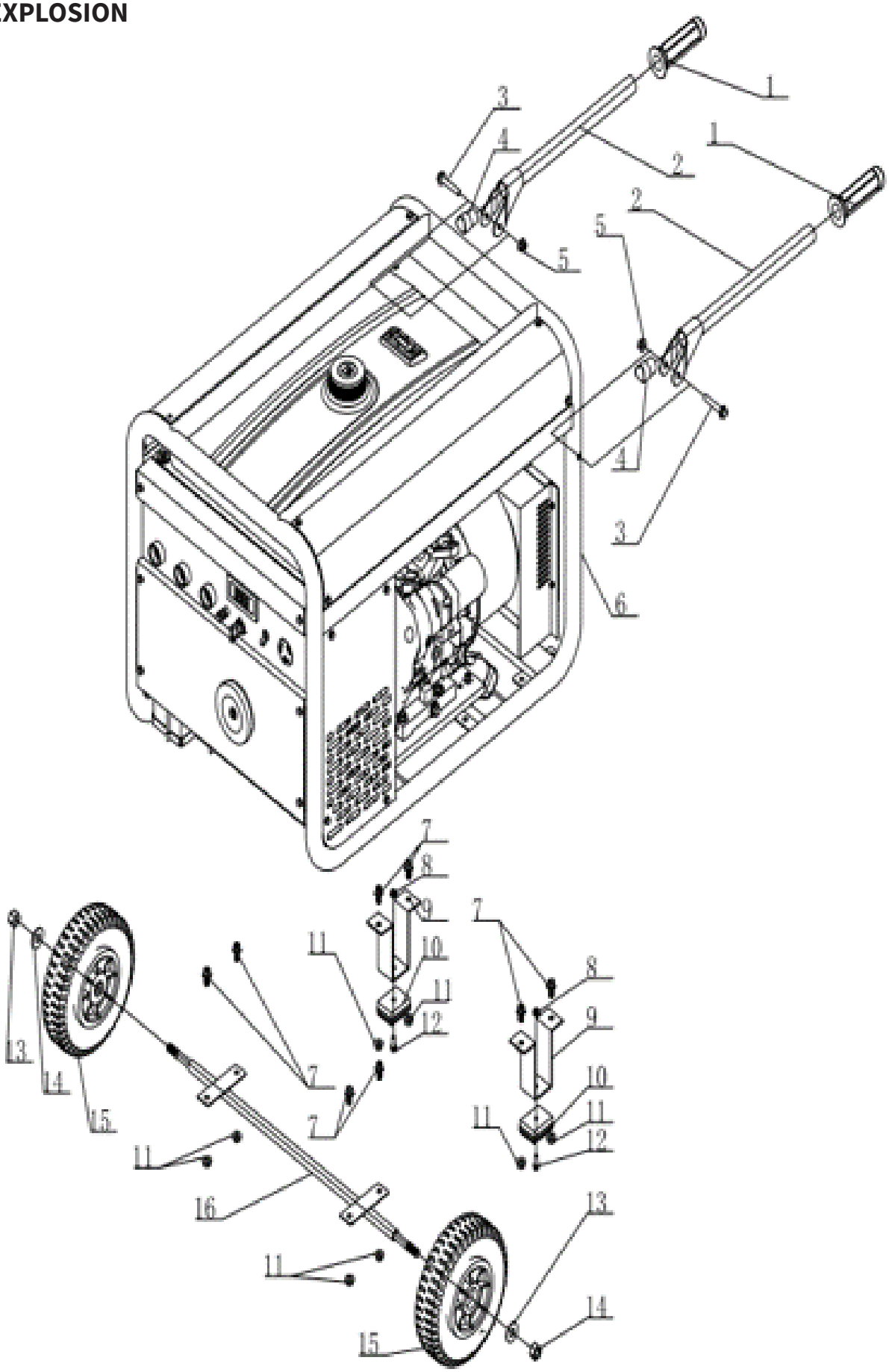


PARTS LIST

No.	Description	QTY
1	190F gasoline engine	1
2	Motor cover	1
3	Hexagon flange bolt M8X16	10
4	Stator	1
5	Hexagon flange bolt M6X55	4
6	Exhaust gasket	1
7	Muffler kit	1
8	Hexagon flange nut M8	14
9	Motor rotor	1
10	Level gasket 25X 10X3	1
11	Center motor hexagon flange bolt	1
12	Motor fan	1
13	Hexagon flange bolt M6X10	4
14	Motor cover	1
15	Hexagon flange bolt M6X8	6
16	Level gasket 24 8X1.5	2
17	Bracket	1
18	Shock-absorbing gasket	4
19	Hexagon flange bolt M8X40	4
20	Gasket	2
21	Hexagon flange bolt M6X12	30
22	Hexagon flange bolt M5X20	1
23	Current regulation handle	1
24	Control panel kit	1
25	Hexagon flange bolt M6X16	4
26	Current regulator	1
27	Junction box	1
28	Cross screw M5X30	2

No.	Description	QTY
29	Air guide seal	1
30	Machine frame	1
31	Side board I	1
32	Guard board	2
33	Activity crosspiece	1
34	AC inverter	1
35	Level gasket 25X 6X1.5	8
36	Hexagon flange bolt M6X20	4
37	Inverter cover	1
38	Battery	1
39	Platen shim	1
40	Battery platen	1
41	Hexagon flange nut M6	4
42	Side board II	1
43	Fuel supply switch	1
44	Fuel tube clamp 9	1
45	Fuel tube I 8.5X2X410	1
46	Fuel filter	1
47	Fuel tube liner	1
48	Fuel tube II 8.5X2X190	1
49	Fuel tank 25L	1
50	Fuel tank positioning pin 12X 10X12	4
51	Fuel tank shock-absorbing gasket	4
52	Hexagon flange bolt M6X25	1
53	Fuel tank strainer	1
54	Fuel tank cap	1
55	Fuel level indicator	1
56	Cross screw M5X15	2

PARTS EXPLOSION



PARTS EXPLOSION

No.	Description	QTY
1	Rubber handle sleeve	2
2	Handle	2
3	Hexagon flange bolt M10X60	2
4	Spacer for handle	2
5	Hexagon flange nut M10	2
6	AC210 welder generator set	1
7	Hexagon flange bolt M8X16	5
8	Hexagon flange nut M6	2
9	Wheel bracket	2
10	Wheel bracket shim	2
11	Hexagon flange nut M8	8
12	Hexagon flange bolt M6X25	2
13	Level gasket ϕ28Xϕ15X2.5	2
14	Hexagon cap nut M12	2
15	8' solid wheel	2
16	Wheel spindle	1

TOMAHAWK

WORK SMARTER NOT HARDER

For big areas and busy schedules, Tomahawk Push Sweepers cover a wider path to reach more surface area so you can finish sweeping faster around indoor and outdoor spaces and on wet or dry surfaces!



Item #: TOS38

38" COMMERCIAL PUSH SWEEPER

www.tomahawk-power.com

TOMAHAWK

THE INDUSTRY'S LIGHTEST 3KW INVERTER

When the lights go out, have peace of mind that the Tomahawk TG3000i Portable Generator will keep your home powered. Each unit comes standard with an easy fueling system, low oil sensor, voltage regulation, and two 120 volt plugs and one 120 volt twist lock outlet.



Item #: TG3000i

3000i WATT INVERTER GENERATOR

www.tomahawk-power.com

TOMAHAWK

Equipment Guide

COMPACTION



Wheel Kit Available



Rammers

Part#:	*Battery Powered Option Available
TR68H	3,550 lbs/sq ft, Honda GX120
JX60H	3,350 lbs/sq ft, Honda GX100
eJX60H	3,350 lbs/sq ft, Honda GXE2.0S



Wheel Kit Available

Forward Plate Compactors

Part#:	*Battery Powered Option Available
TPC80H	3,000 lbs/sq ft, Honda, 21"x17" Plate
TPC85H	3,200 lbs/sq ft, Honda, 23"x17" Plate
TPC90H	3,400 lbs/sq ft, Honda, 22"x20" Plate



Reverse Plate Compactors

Part#:	
TPC100H	3,500 lbs/sq ft, Honda, 19"x14" Plate
TPC170H	7,000 lbs/sq ft, Honda, 28"x20" Plate
TPC400H	11,690 lbs/sq ft, Honda, 32"x22" Plate

CONCRETE



Power Screeds

Part#:	*Battery Powered Option Available
TVSA-H	6-16 ft Magnesium Blades Honda GX35, Adjustable Handles
eTVSA	6-16 ft Magnesium Blades 36V/5 Ah Battery, Adjustable Handles



Concrete Sprayers

Part#: TCS6.5	Adjustable from 0-450 PSI
Handles 30% + Solids,1.8 HP 2 Stroke Motor,	
24" Brass Wand 0.5 GPM, Fan Nozzle Included,	
Spray 15,000 ft^2 in 10 Minutes	



Early Entry Saws

Part#:	
TFS6H	6" Blade Diameter, Blade Compatibility, Honda GX120
TFS10H	10" Blade Diameter, Self Propelled, Blade Compatibility, Honda GX270/GX390

TROWELS



Porta-Trowels

Part#: JXPT30T	Lightweight at 40 lbs
Adjustable 18 ft Extension Bull Float Poles	
30" Diameter, 4-Blade Assembly	
Adjustable Blade Pitch from 0-28°	



Walk Behind Trowels

Part#:	*Items Listed Includes Combo Blades*
TPT24H	2 ft Edger, Honda GX160, 0-28° Blade Pitch
TPT36H	3 ft, Honda GX160/GX270, 0-28° Blade Pitch
TPT46H	4 ft, Honda GX270/GX390, 0-28° Blade Pitch



Ride on Trowels

Part#:	
TRT46V	8 ft Hydraulic Steer, 35 HP Vanguard, CVT Clutch, 180 RPM
TRT60V	10 ft Full Hydrostatic, 74 HP Hatz Diesel

HAVE QUESTIONS?

Contact us. ***We're here to help!***

(866) 577-4476

Email us **at sales@tomahawk-power.com**

TOMAHAWK

Equipment Guide

GENERATORS

QUIET INVERTER SERIES



58 db

2,000 - 3,300 Watt Series

TG2000i	2,200w Max / 2,000w Rated
TG3000i	3,300w Max / 3,000w Rated, 120/220V, 30 AMP Twist Lock
	Run Time 8 Hrs @ 50% Load CARB Compliant, GFCI 120v

QUIET INVERTER SERIES

EFI OPTION AVAILABLE



62 db

4,500 - 5,500 Watt Series

TG4500i	4,500w Max / 3,800w Rated
TG5500i	5,500w Max / 5,000w Rated, 120/220V
	Run Time 8 Hrs @ 50% Load CARB Compliant, GFCI

QUIET INVERTER SERIES



62 db

10,500 Watt Series

TG9000i	10,500w Max / 8,500w Rated
Voltage Selector, 120/220V	
Run Time 14.5hrs @ 25% Load	
CARB Compliant, GFCI, CO Detector	

FLOORING



Grinders and Scrapers

Part#:	
TGDR10	10" Disc, 120V, 1/32" Per Pass, 11 AMP, 1.5 HP, 1,725 RPM
TSCP8	8" Blade, 120V, 11 AMP, 3/4 HP, 1,725 RPM, Carpet & Tile Remover

HONDA ENGINES



Concrete Scarifier

Part#: TSCAR-8H	*Battery Powered Option Available
Honda GX160 Engine, Scarifies 350 - 500ft²/hr	
OSHA Compliant Vacuum Port	
8" Carbide Tungsten Drum Kit, 1/8" Per Pass	



Floor Sweepers

Part#:	*Battery Powered Option Available
TOS38	38" Working Width, Triple Broom System, 14.5 Gallon
eTOS30	30" Working Width, Battery Powered Triple Broom System, 13.5 Gallon

OUTDOOR POWER

HONDA ENGINES



Trash Water Pumps

Part#:	
TW3H	3" Pump, Honda GX270, 375 GPM, Elevation: 89ft, Suction: 25ft
TW4H	4" Pump, Honda GX390, 581 GPM, Elevation: 92ft, Suction: 26ft



Power Buggy

Part#: TBUGGY300e	48V-20Ah Battery
Handles up to 8 cu ft or 660 lbs. Bucket Capacity	
Hydraulic Bucket with 92° Tilt, 8 Hour Run Time	
Snow Plow Attachment & Bucket Extender Available	

HONDA ENGINES



72 db

Welder Generators

Part#:	*6010-7024 Rods Compatible*
TWG120A	120 Amp Welder, 60% Duty Cycle, 2000w, Includes Wheel Kit
TWG210A	210 Amp Welder, 60% Duty Cycle, 2000w, Includes Wheel Kit

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